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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,089	10/28/2003	Akio Omiya	Q78144	3485

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EXAMINER

HERNANDEZ, NELSON D

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/694,089

Applicant(s)

OMIYA ET AL.

Examiner

Nelson D. Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-13 and 18 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/8/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 2 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al., US 2003/0156832 A1 in view of Wakabayashi et al., US Patent 4,937,609.**

Regarding claim 1, Nomura et al. discloses a digital camera (Fig. 1) that creates an image signal through catching a subject light, the digital camera comprising: an image taking lens (See fig. 1), which is variable in a focal length, comprising a plurality of lenses including a focus lens (Fig. 1: L3) arranged on an optical axis, wherein a focusing is performed by a movement of the focus lens (Page 2, ¶ 0051; page 2, ¶ 0052-0054); a lens barrel (Fig. 1: 12) that incorporates therein the image taking lens, having in front an aperture through which the image taking lens appears and having in rear an internal space defined by a wall (Fig. 1: 11), the lens barrel being free in

extension and collapse and performing a focal length control; and a solid state imaging device (Fig. 1: C) that receives the subject light formed by the image taking lens to create the image signal, the solid state imaging device being disposed at a position projecting from the wall to the internal space and being supported by the wall (See fig. 1), wherein the lens barrel has a lens advancing and saving mechanism in which at the time of the collapse of the lens barrel, a zoom lens (Fig. 1: L2) is saved to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device (See fig. 2), the hollow portion being formed by the fact that the solid state imaging device is disposed at a position projecting from the wall, and at the time of the extension of the lens barrel, the zoom lens is advanced onto an optical axis of the image taking lens (See fig. 2) (Page 2, ¶ 0051; page 3, ¶ 0052-0054).

Although Nomura et al. does not explicitly disclose that the focus lens is the lens being saved to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device, and that the focus lens is the one advanced onto an optical axis of the image taking lens, Nomura et al. discloses that the fundamental principle of the invention is that an element of a plurality of optical elements is removed from a position on the optical axis of the plurality of optical elements to a different position outside of the optical axis, and the removed element and at least one element of the remaining optical element(s) of the plurality of optical elements are moved rearward along the optical axis, for the purpose of refracting the plurality of optical elements from a ready-to-photograph state which initially lie on a single optical axis and that the structure of the retractable lens system according to the invention is not limited

solely to that of the illustrated embodiments taught as long as the structure is designed on this fundamental principle. Nomura et al. also discloses that more than one of the lens groups can be positioned outside the optical axis to retract the lens barrel even more (Page 6, ¶ 0073-0077).

Wakabayashi et al. teaches a camera (See fig. 4) comprising a lens barrel (See figs. 3 and 4) in which a focus lens (Fig. 3: 80) and a wide-angle lens (Fig. 3: 70) are removed for the optical axis of the main lens (Fig. 4: 60) depending on the operation of the camera in order to perform proper focus adjustment of the image being captured (Col. 3, lines 23-54; col. 5, line 47 – col. 6, line 49; col. 2, lines 16-31).

Although Wakabayashi et al. does not explicitly teach that the focus lens is removed for the optical axis in order to retract or extend the lens barrel. One of ordinary skill in the art would find obvious to combine the teaching of rearranging any of the optical element to retract even more the lens barrel in Nomura et al. in view of the teaching of removing the focusing lens out of the optical path depending on a camera operation as taught in Wakabayashi et al. to modify the camera in Nomura et al to have the focus lens saved to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device, and having the focus lens advanced onto an optical axis of the image taking lens. The motivation to do so would have been to perform proper focus adjustment of the image being captured and to have the lens barrel retracting as much as possible in order to reduce the camera size making it more portable.

Regarding claim 2, limitations are taught by the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed with respect to claim 1. Therefore, grounds for rejecting claim 1, apply here.

Regarding claim 7, the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed with respect to claim 1 teaches a light quantity control member (Shutter S as shown in fig. 1) that moves in one united body together with the focus lens in the optical axis direction of the image taking lens stored in the lens barrel to control a light quantity of the subject light passing through the image taking lens (in Nomura et al., when focus in the optical path, said focus lens and the shutter moves as one body in the optical axis when performing zooming since Nomura et al. discloses that when performing zooming more lens group, so if the lens group L3 (focus) and the lens group L2 (zoom, which moves together with the shutter) are used to perform zooming operation, then the zoom lens, the shutter and the focus lens are moving in the optical axis as a united body (Page 2, ¶ 0051; page 3, ¶ 0052-0054)), and the lens advancing and saving mechanism provides such a performance that at the time of the collapse of the lens barrel, the light quantity control member is saved together with the rear elements lens to the hollow portion, and at the time of the extension of the lens barrel, the light quantity control member is advanced together with the focus lens onto the optical axis of the image taking lens (Wakabayashi et al. teaches saving the focus lens into a hollow space; Nomura et al. discloses saving the rear lens into a hollow space (also that the shutter can be saved in the same manner as the rear lens (zoom lens) (page 6, ¶ 0076))); therefore, the combined teaching of Nomura et al. in

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view of Wakabayashi et al. teaches that the lens advancing and saving mechanism provides such a performance that at the time of the collapse of the lens barrel, the light quantity control member is saved together with the rear elements lens to the hollow portion, and at the time of the extension of the lens barrel, the light quantity control member is advanced together with the focus lens onto the optical axis of the image taking lens). Grounds for rejecting claim 1 apply here.

Regarding claim 8, the combined teaching of Namura et al. in view of Wakabayashi et al. teaches that the light quantity control member as a shutter (see Nomura et al. (Page 2, ¶ 0051; page 3, ¶ 0052-0054)) but fails to teach that said shutter as an electro-optical element.

However, Official Notice is take that the use of electro-optical shutters instead of other types of shutters is notoriously well known in the art and one of ordinary skill in the art at the time the invention was made would find obvious to replace the shutter in Namura et al. with an electro-optical shutter. The motivation to do so would have been to have a more compact shutter with satisfactorily responsive to high-speed operation that can be easily synchronized with other parts of the camera.

Regarding claim 9, the combined teaching of Namura et al. in view of Wakabayashi et al. teaches that the light quantity control member is an aperture member (shutter S as shown in fig. 1) that controls an aperture caliber to control the subject light passing through the image taking lens (Page 1, ¶ 0023; Page 2, ¶ 0024-0025 and ¶ 0051; page 3, ¶ 0052-0054).

Regarding claim 10, limitations can be found in claims 8 and 9.

Regarding claims 11 and 12, the combined teaching of Namura et al. in view of Wakabayashi et al. fails to teach that the quantity control member is a shutter member that controls a shutter speed to control the subject light passing through the image-taking lens.

However, Official Notice is take that the use of shutters controlling the shutter speed to control the subject light passing through the image-taking lens is notoriously well known in the art and one of ordinary skill in the art at the time the invention was made would find obvious to incorporate in Nomura et al. and Wakabayashi et al. with a shutter controlling the shutter speed to control the subject light passing through the image-taking lens. The motivation to do so would have been to obtain a better control of exposure of the image being captured depending on the scene illumination.

Regarding claim 13, limitations are taught by the combined teaching of Nomura et al. in view of Wakabayashi et al. as discussed and analyzed with respect to claim 1. Therefore, grounds for rejecting claim 1, apply here.

4. **Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al., US 2003/0156832 A1.**

Regarding claim 18, Nomura et al. discloses a digital camera (Fig. 1) that creates an image signal through catching a subject light, the digital camera comprising: an image taking lens (See fig. 1), which is variable in a focal length; a light quantity control member (Shutter S shown in fig. 1) that controls a light quantity of the subject light passing through the image taking lens, and a lens barrel (Fig. 1: 12) that

incorporates therein the image taking lens, having an internal space having in front an aperture through which the image taking lens appears, the lens barrel being free in extension and collapse (See fig. 1). Nomura et al also discloses that the lens barrel has a lens advancing and saving mechanism in which at the time of the collapse of the lens barrel, a zoom lens (Fig. 1: L2) is saved to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device (See fig. 2), the hollow portion being formed by the fact that the solid state imaging device is disposed at a position projecting from the wall, and at the time of the extension of the lens barrel, the zoom lens is advanced onto an optical axis of the image taking lens (See fig. 2) (Page 2, ¶ 0051; page 3, ¶ 0052-0054).

Although Nomura et al. does not explicitly disclose that the lens barrel has a light quantity control member advancing and saving mechanism in which at the time of the collapse of the lens barrel, the light quantity control member is saved to a predetermined light quantity control member saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the light quantity control member is advanced onto the optical axis of the image taking lens, Nomura et al. discloses that the fundamental principle of the invention is that an element of a plurality of optical elements is removed from a position on the optical axis of the plurality of optical elements to a different position outside of the optical axis, and the removed element and at least one element of the remaining optical element(s) of the plurality of optical elements are moved rearward along the optical axis, for the purpose of refracting the plurality of optical elements from a ready-to-photograph state which initially lie on a

single optical axis and that the structure of the retractable lens system according to the invention is not limited solely to that of the illustrated embodiments taught as long as the structure is designed on this fundamental principle. Nomura et al. also discloses that one or more of any other optical element such as the diaphragm shutter S and the low-pass filter F can constitute the removable optical element(s) in the same manner as the second lens group L2 of the above illustrated embodiment of the retractable lens system (Page 6, ¶ 0073-0077).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the lens barrel in Nomura et al. with a light quantity control member advancing and saving mechanism in which at the time of the collapse of the lens barrel, the light quantity control member is saved to a predetermined light quantity control member saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the light quantity control member is advanced onto the optical axis of the image taking lens. The motivation to do so would have been to make the camera more portable by moving more elements out of the optical axis when retracting the lens barrel as suggested by Nomura et al. (Page 6, ¶ 0073-0077).

Allowable Subject Matter

5. **Claims 3-6 and 14-17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the wall has a revolving affecting section having a geometry projecting into the internal space, the revolving affecting section being in contact with the focus lens holding frame at the time of the collapse to affect revolving of the focus lens holding frame, and the focus lens holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the focus lens revolves into the hollow portion, including all the limitations of claims 1 and 2.

Regarding claim 14, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the elements of the present claim, that the wall has a revolving affecting section having a geometry projecting into the internal space, the revolving affecting section being in contact with the focus lens holding frame at the time of the collapse to affect revolving of the focus lens holding frame, and the focus lens holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the focus lens revolves into the saving position, including all the limitations of claim 13.

Contact


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez
Examiner
Art Unit 2622

NDHH
March 8, 2007


TUAN HO
PRIMARY EXAMINER